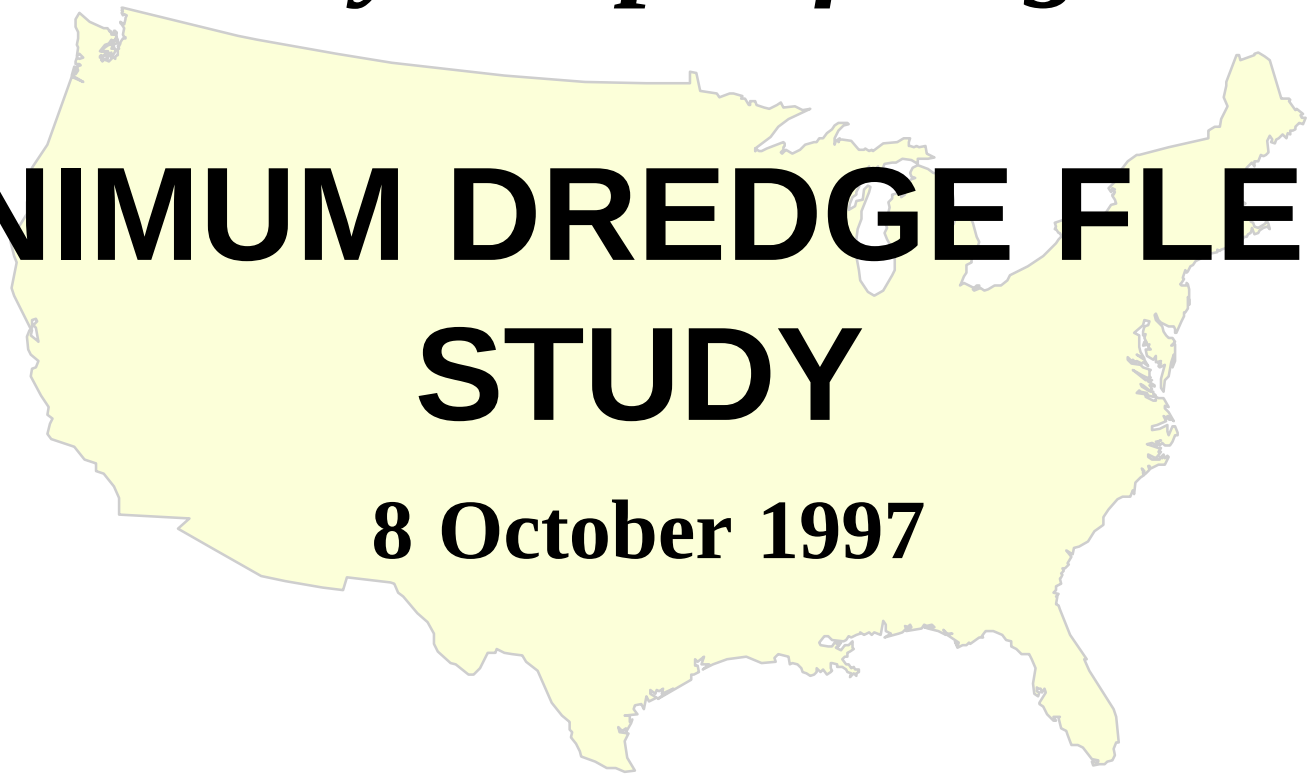
-- Draft --

U.S. Army Corps of Engineers



MINIMUM DREDGE FLEET STUDY

8 October 1997

Purpose

To propose and evaluate options for the future disposition of the U.S. Army Corps of Engineers Minimum Dredge Fleet

Focus is on hopper dredges

USACE Navigation Mission

To provide safe, reliable, and efficient waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, and recreation

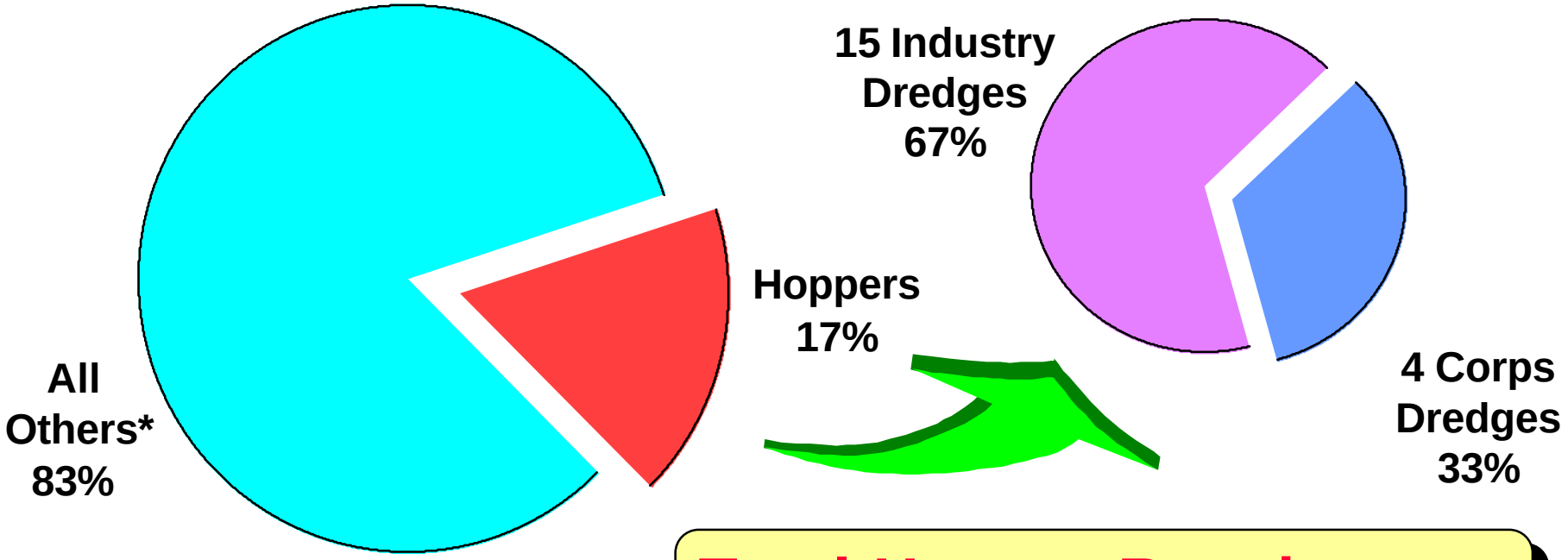
- 25,000 miles of commercially navigable channels
- 627 shallow harbors, 299 deep-draft harbors
- 2.2 billion tons of commerce (1.1 billion tons foreign)
- $500 million annual dredging program (about 30% of the $1.6 billion Civil O&M Program)

Interested Parties

- **Congress**
- **Ports**
- **Maritime Unions**
- **Dredging Industry**

Dredging "Requirement"

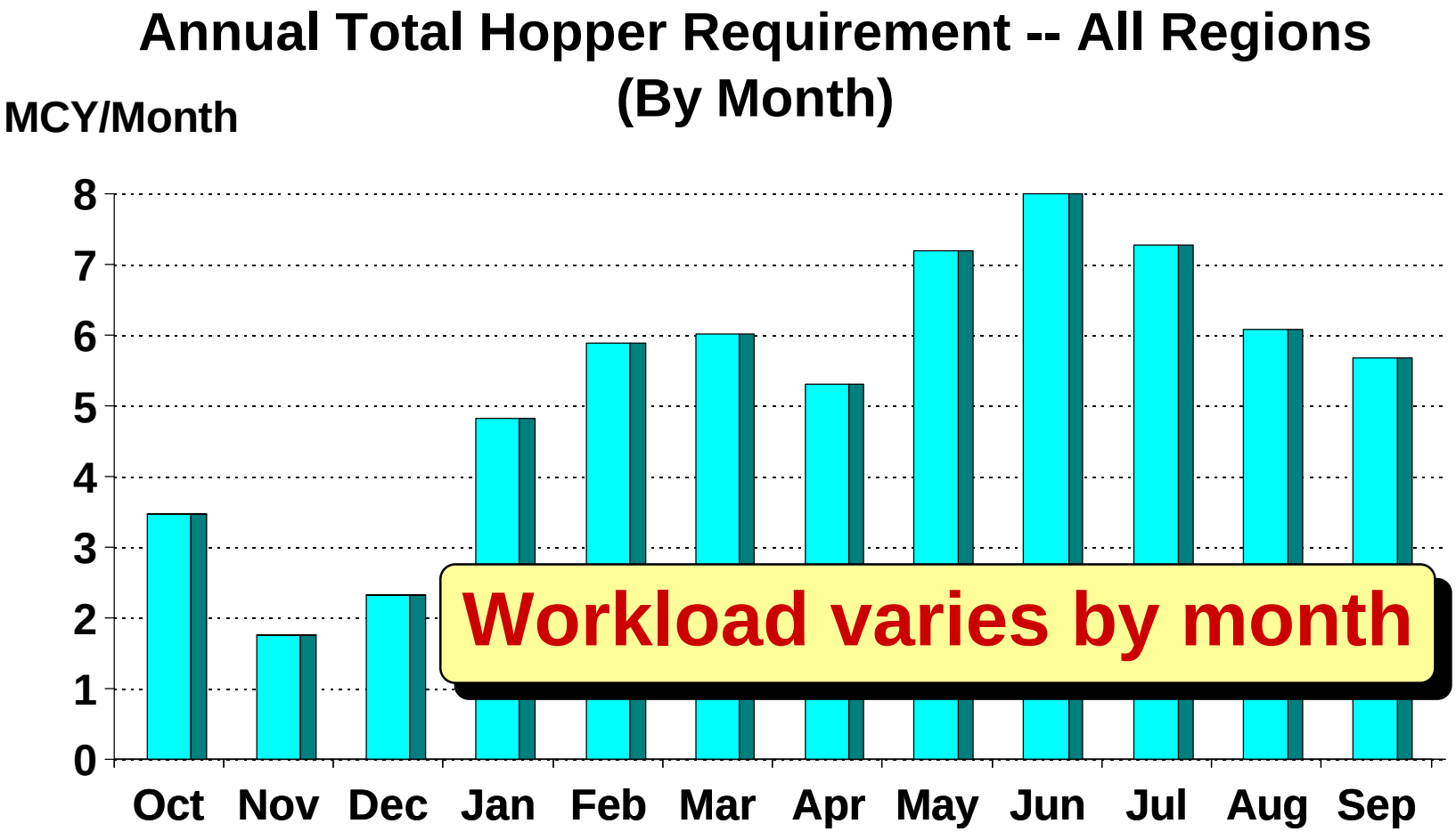
Corps Total Dredging Requirement
~ $500 M; 285 MCY



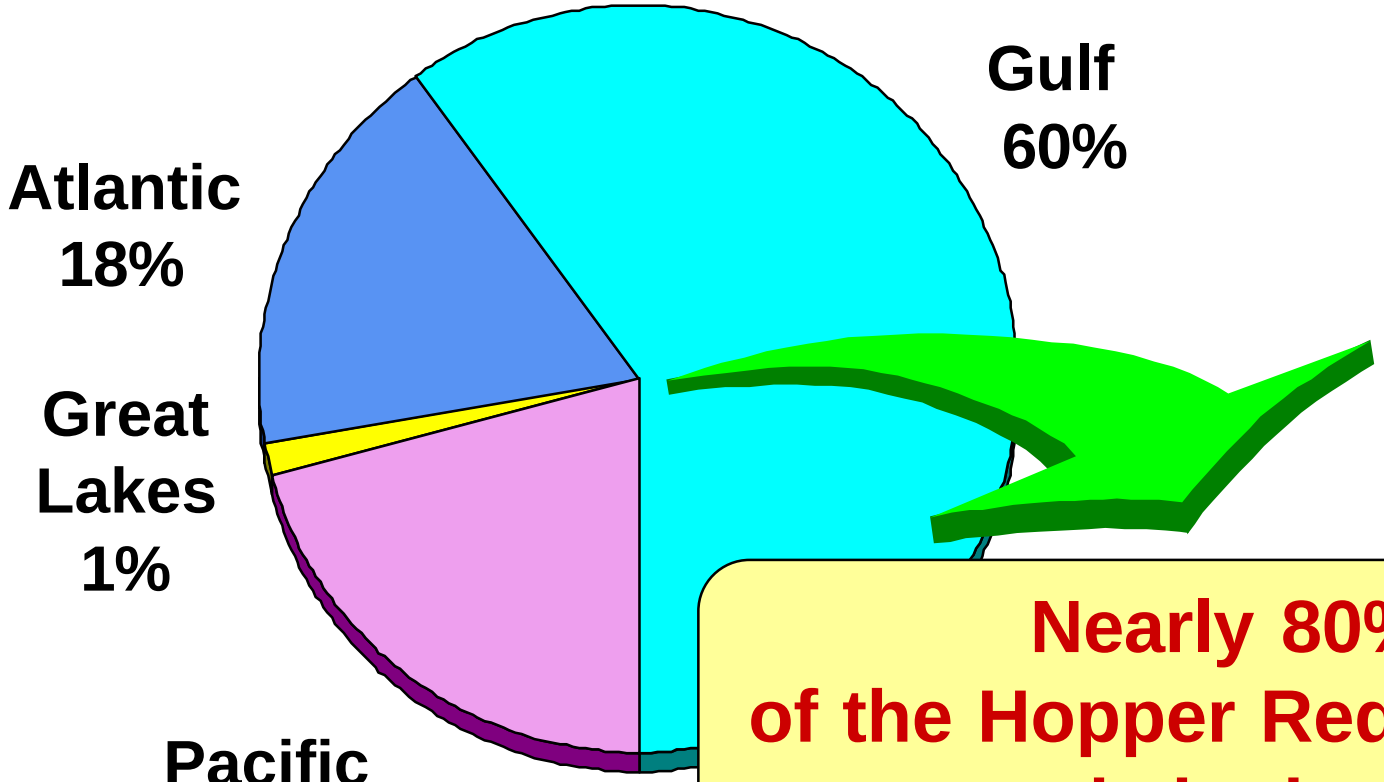
*Bucket, pipeline, dustpan, sidecaster, special purpose

Total Hopper Requirement
~ $150M; 60 MCY

Hopper Dredge “Requirement”



Hopper Dredge Requirement By Region



Nearly 80%
of the Hopper Requirement
is in the
Atlantic and Gulf Regions

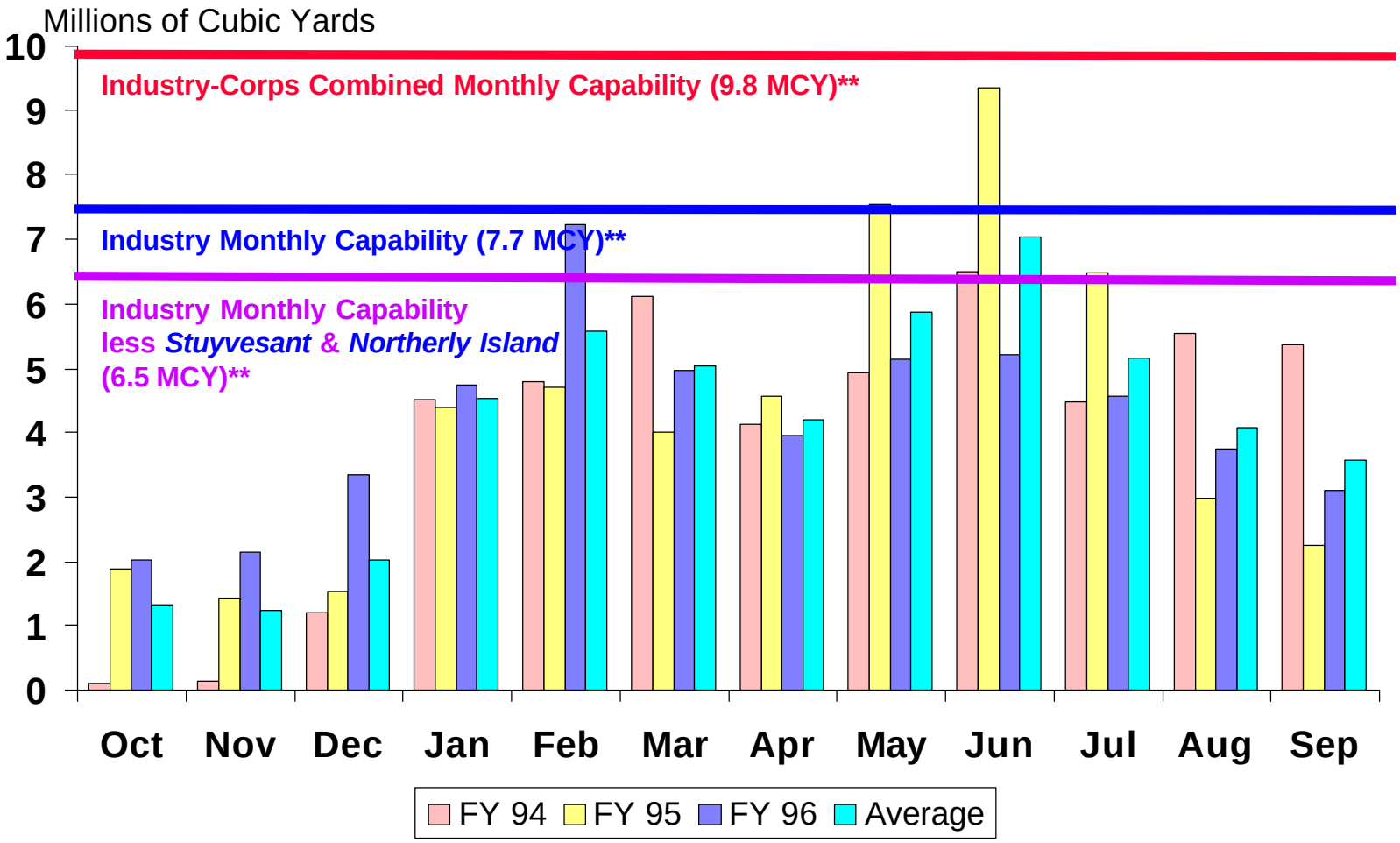
19 Hopper Dredges
(15 Industry Dredges/7 Companies; 4 Corps Dredges)

CLASS	INDUSTRY, OWNER	CORPS, DISTRICT
LARGE HOPPER	*Long Island*, NATCO *Stuyvesant*, Stuyvesant *Eagle 1*, Bean	*Wheeler*, New Orleans *Essayons*, Portland
MEDIUM HOPPER	*Columbus*, B&B *Ouachita*, Gulf Coast Trailing *R.N. Weeks*, Weeks Marine *Newport*, Manson *Dodge Island*, NATCO *Manhattan Island*, NATCO *Padre Island*, NATCO *Sugar Island*, NATCO	*McFarland*, Philadelphia
SMALL HOPPER	*Northerly Island*, NATCO *Westport*, Manson *Atchafalaya*, Gulf Coast Trailing *Mermentau*, Gulf Coast Trailing	*Yaquina*, Portland

The Challenge

- **The ports and maritime users need reliable navigation channels**
- **Public Law 95-269 (1978)**
  - **Corps should retire dredges when industry demonstrates capability, timeliness, and reasonable prices**
  - **Corps retains only minimum dredge fleet to carry out emergency and defense work. That fleet should be fully operational and improved as necessary**
- **There is a need for a viable, competitive private hopper dredge industry**
- **Peak demands reduce the competitive bidding environment**

Hopper Dredging Quantities*
Atlantic and Gulf Regions



* FY94-96 quantities extracted from DIS

** Capability from 1991 ESSC Report; excludes *Newport*, *Westport*, *Columbus*, *Essayons*, *Yaquina*

Guiding Principle

The Corps must ensure the best deal possible for the American taxpayer, and seek ways to ensure a viable, competitive private hopper dredge industry, while sustaining our nation's capability to respond to peak workloads, and emergency and national defense needs.

Risk to Navigation

- **HIGH RISK - Full utilization of industry dredges for majority of time, with no capability to perform unforeseen, time-sensitive work. No competitive bidding environment.**
- **LOW RISK - Additional dredges available and not fully utilized. Ready to respond to emergency and unforeseen requirements. A competitive bidding environment.**

Risk to Industry

- **HIGH RISK - Unpredictable workload, with minimal utilization scheduled, maximum workload committed to Corps dredges. Insufficient income to offset investment, maintenance, repair, and operating costs.**
- **LOW RISK - Maximum utilization, well-defined, consistent schedule; a national capability to respond to unforeseen requirements.**

Current Limitations on Corps Hopper Dredges

Wheeler **- Ready Reserve Status**
1 October 1997

	Maximum	Minimum
Essayons	**6.8 MCY**	**180 days in Pacific**
McFarland	**3.5 MCY**	**85 days in Atlantic**
Yaquina	**1.8 MCY**	**180 days in Pacific**

As directed by Congress

Minimum Hopper Dredge Fleet Options

OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
1	250 days Full Crew	250 days Full Crew	250 days Full Crew	250 days Full Crew
2	Ready Reserve* One Crew	180 days Full Crew	180 days Full Crew	180 days Full Crew
3	Standby One Crew	200 days Full Crew	180 days Full Crew	Retire**
4	Retire**	200 days Full Crew	240 days Full Crew	Retire**
5	Standby One Crew	200 days Full Crew	Retire**	Retire**
6	200 days Full Crew	200 days Full Crew	Retire**	Retire**
7	Standby One Crew	200 days Full Crew	Standby One Crew	Retire**
8	Standby One Crew	Standby One Crew	Standby One Crew	Retire**

Status Quo

* WRDA 96

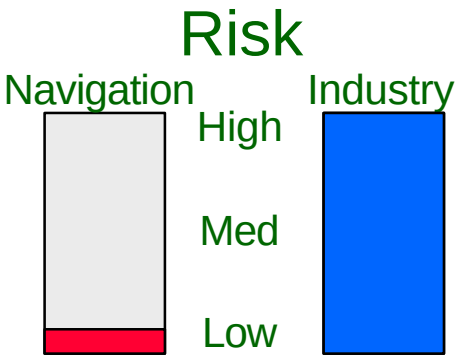
** Retire: Dredge is sold in U.S., excessed, or mothballed. Crew is separated.

Standby Status

- **No work scheduled -- ready to respond in 72 hours**
- **1 Crew -- 21 day emergency operating capability**
- **5 days training per month in support mode**
- **Performs support dredging (cleanup, side slope dredging, overruns on projects with environmental windows)**

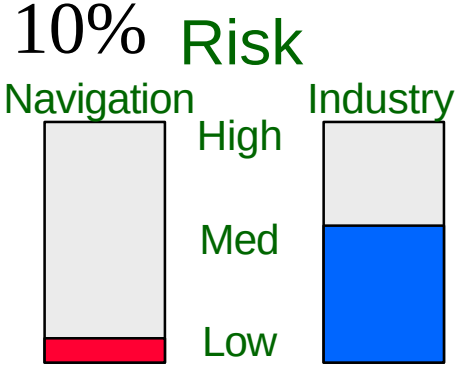
OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
1	250 days Full Crew	250 days Full Crew	250 days Full Crew	250 days Full Crew

- **Option 1: Fully use Corps hoppers**
- **Description:**
  - Fully use government assets -- 4 Corps hoppers work 250 days each
- **Implications:**
  - Slight increase in government costs
  - 19% less work for industry
  - Lowest total annual program costs



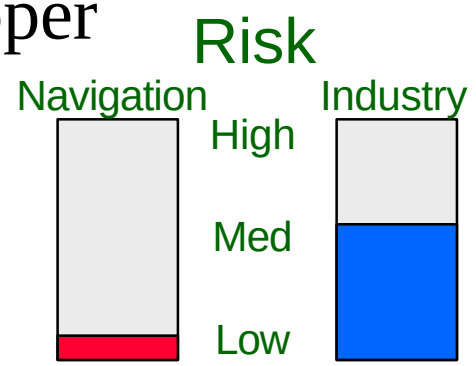
OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
2	Ready Reserve One Crew	180 days Full Crew	180 days Full Crew	180 days Full Crew

- **Option 2: Corps hoppers operate under current Legislative requirements (Status Quo)**
- **Description:**
  - *Wheeler* in ready reserve with one crew; its normal 11.2 MCY workload done by industry for $11 million
  - *Essayons*, *McFarland*, & *Yaquina* work within prescribed quantity ceilings and utilization floors
- **Implications:**
  - Increases work for industry hoppers by 10%
  - *Wheeler* can not work unless industry not responsive, or emergency
  - Increases total annual program costs



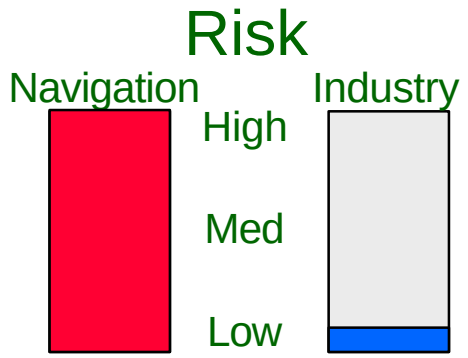
OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
3	Standby One Crew	200 days Full Crew	180 days Full Crew	Retire

- **Option 3: *Wheeler* in standby; *Yaquina* retired**
- **Description:**
  - *Wheeler* in standby with one crew; its normal 11.2 MCY workload done by industry for $11 million
  - *Essayons* picks up some *Yaquina* work; 140 days of remaining *Yaquina* work offered to Industry
- **Implications:**
  - Increases use of Industry hoppers by12%
  - *Wheeler* will operate as a support hopper dredge, responding to unforeseen requirements and emergencies
  - Increases total annual program costs



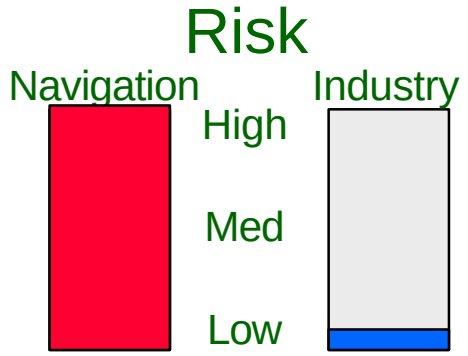
OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
4	Retire	200 days Full Crew	240 days Full Crew	Retire

- **Option 4: *Wheeler* & *Yaquina* retired**
- **Description:**
  - With *Wheeler* retired, *McFarland* may work 240 days due to peak workload periods
  - *Essayons* picks up some *Yaquina* work; 140 days of remaining *Yaquina* work offered to Industry
- **Implications:**
  - Higher navigation risk but low Industry risk
  - Decreases total annual program costs
  - Increases industry workload by 10%



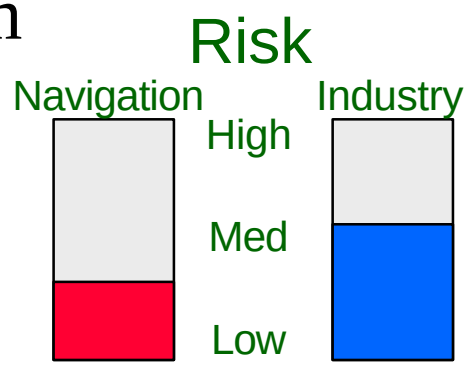
OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
5	Standby One Crew	200 days Full Crew	Retire	Retire

- **Option 5: *Wheeler* in standby; *McFarland* & *Yaquina* retired**
- **Description:**
  - *McFarland*'s 3.5 MCY work offered to Industry
  - *Essayons* picks up some *Yaquina* work; 140 days of remaining *Yaquina* work offered to Industry
- **Implications:**
  - Higher navigation risk but low Industry risk
  - Increase industry workload by 17%
  - Decreases total annual program costs



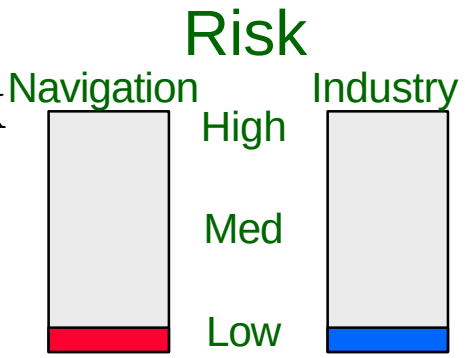
OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
6	200 days Full Crew	200 days Full Crew	Retire	Retire

- **Option 6: *McFarland* & *Yaquina* retired**
- **Description:**
  - *McFarland*'s 3.5 MCY work offered to Industry
  - *Essayons* picks up some *Yaquina* work; 140 days of remaining *Yaquina* work offered to Industry
  - Wheeler works 200-day schedule
- **Implications:**
  - Less work to Industry by 2%
  - Low/medium navigation risk; medium Industry risk
  - Decreases total annual program costs



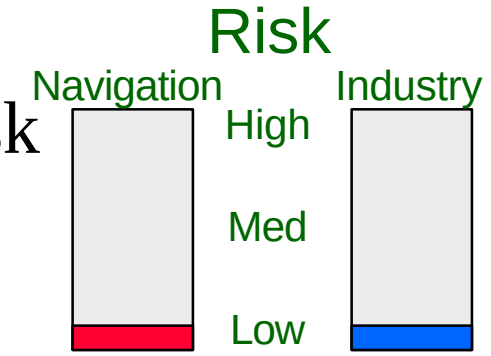
OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
7	Standby One Crew	200 days Full Crew	Standby One Crew	Retire

- **Option 7: Standby *Wheeler* & *McFarland*; *Yaquina* retired**
- **Description:**
  - *Wheeler*'s 11.2 MCY and *McFarland*'s 3.5 MCY work offered to Industry
  - *Essayons* picks up some *Yaquina* work; 140 days of remaining *Yaquina* work offered to Industry
- **Implications:**
  - Increased work to Industry by 17%
  - Low navigation risk; low Industry risk
  - Increases total annual program costs



OPTION	CORPS HOPPER DREDGE STATUS			
	Wheeler	*Essayons*	*McFarland*	*Yaquina*
8	Standby One Crew	Standby One Crew	Standby One Crew	Retire

- **Option 8: Standby *Wheeler*, *McFarland*, & *Essayons*; *Yaquina* retired**
- **Description:**
  - Option contingent upon additional Industry capability on West Coast
  - *Wheeler*'s 12.5 MCY, *McFarland*'s 3.5 MCY, and *Essayons*' 6.8 MCY work offered to Industry
- **Implications:**
  - Increased work to Industry to 100%
  - Low navigation risk; low Industry risk
  - Increases total annual program costs



Risk Analysis

Opt	Corps Hopper Dredge Status				Risk Criteria				
	Whe.	*Ess.*	*McF.*	*Yaq.*	Nav.	Ind.	Work to Ind.	Annual Cost	Diff. from S.Q.
1	250 Full	250 Full	250 Full	250 Full	**Low**	**High**	**52%**	**-$10.7M**	**-$17.8M**
Status Quo **2**	Reserve One	180 Full	180 Full	180 Full	**Low**	**Med.**	**81%**	**$7.1M**	**$0.0M**
3	Standby One	200 Full	180 Full	Retire	**Low**	**Med.**	**83%**	**$3.5M**	**-$3.6M**
4	Retire	200 Full	240 Full	Retire	**High**	**Low**	**81%**	**-$4.9M**	**-$12.0M**
5	Standby One	200 Full	Retire	Retire	**High**	**Low**	**88%**	**-$1.1M**	**-$8.2M**
6	200 Full	200 Full	Retire	Retire	**Low/ Med.**	**Med.**	**69%**	**-$9.6M**	**-$16.7M**
7	Standby One	200 Full	Standby One	Retire	**Low**	**Low**	**88%**	**$6.0M**	**-$1.1M**
8	Standby One	Standby One	Standby One	Retire	**Low***	**Low**	**100%**	**$11.8M**	**$4.7M**

* Contingent upon additional industry capability on the West Coast

Summary and Conclusions

- **The dredging "requirement" is unpredictable**
- **Hopper dredging capability is limited**
- **Specific direction is dependent on acceptance of risk**
- **Corps will follow its guiding principles --**
  - Ensure the best deal possible for the American taxpayer
  - Schedule work to ensure a viable, competitive private fleet
  - Corps capability focused on peak workload, emergency and defense needs

Schedule
(October - November 1997)

- **Release of draft study package**
- **Receive comments**
- **Evaluate comments**
- **Prepare final report**